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PLANT INDUSTRY

WEEKLY STATION REPORTS

OF THE DIVISION OF

DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

NOV 2 1935

Not for publication without
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REPORT FOR THE WEEK ENDING NOVEMBER 2, 1935.

HAVRE:

The drought condition of the summer continued through September and October. Precipitation amounted to 0.15 inch in September and 0.45 inch in October. Soil moisture reserves are very low, as is shown by soil moisture samples in fallow land. The first foot is practically dry and with very little reserve in the second foot. Bi-weekly seedings of winter wheat, beginning August 15, show no germination whatever. This is the first year since this station started that none of the winter grains have germinated. Fall plowing was delayed until the first week in October, and was very dry at that time.

Temperatures in September were slightly above normal, and in October averaged 1.5° below normal. During the last part of October temperatures fluctuated a great deal. On the 26th the maximum was 76°, which was the highest for this late in October since the records have been kept at the station. On the 31st the minimum was -10°, which is a low record for October. Wind velocity for September was practically normal, but in October averaged 8.2 MPH on a 2-foot anemometer, or 2.8 MPH above normal for the station. In October there were several very windy days, with extremely low humidity. There was, however, very little soil blowing.

Range conditions are fairly satisfactory in this section. The early growth of grass this year was quite abundant, and livestock generally are in good condition this fall. Because of a shortage of winter feed and with satisfactory prices, livestock shipments have been heavy. The surplus of hay is mostly in the irrigated districts, and the most of this has been selling at from $8.00 to $12.00 per ton in the stack.

Maximum temperature, 72°; minimum, -23°; precipitation, 0.15 inch.

JUDITH BASIN:

The weather the past week has been decidedly wintry with some snow and temperatures below the zero mark. The change in the temperature was abrupt, dropping from a maximum of 73° October 27 to 9° the next day. Since then the minimum has been below zero each night. The amount of snow that has fallen during the current storm is not sufficient to add to the soil moisture supply but is somewhat heavier in the mountains.

October precipitation was 1.46 inches, which wet the soil to a depth of about 5 inches. Very little of the winter wheat has emerged, and its condition at this date thru out central Montana is the poorest in years.

Two earth tremors were felt in this vicinity during the month of October, one on the 18th and the other the 31st. These were the two quakes that caused heavy damage in Helena.

Maximum temperature, 73°; minimum, -14°; precipitation, 0.05 inch

HUNTLEY:

The fore part of the week was warm and pleasant, but temperatures dropped abruptly during the night of the 29th and since that date have remained below the freezing point, with minima a little above or below the zero mark each day. A light snow borne on a northeast wind has sifted down for the last three days, and, although the total precipita-

tion received has not been large, there is sufficient cover on the ground to afford some protection to newly emerged winter wheat.

Winter wheat on the higher bench lands is reported as now coming up in patchy stands, whereas on the valley farms very little of the seed has germinated. A trip through some of the nearer wheat-growing sections early in the week revealed the fact that wheat sown with the furrow drill was farther advanced in growth and generally showed much more uniform stands than did wheat sown with the ordinary surface drill. Some supposedly abandoned fields in the "blow-soil" areas are being farmed this fall by the "strip" method and the use of furrow drills for seeding winter wheat.

Maximum temperature, 77°; minumum, -4°; precipitation, 0.08 inch.

SHERIDAN:

Mild weather the first two days of the week was followed by light snow and cold weather for the remainder of the week. Only clean up jobs in making ready for winter and hauling some gravel on the station roadways was done during the week.

Mean temperatures for October were about the average for the month at this station, with the last few days of the month considerably below the average. Precipitation was 0.49 inch, just about one-third the station average for the month. Total rainfall since harvest was only about 2.7 inches, which came in the form of scattered showers and did not penetrate sufficiently to be of any benefit for plowing. Fall grain has emerged with only a scattered stand, much of the seed still being in dry soil when the surface of the ground froze this week.

Maximum temperature, 74°; minimum, 1°; precipitation, 0.09 inch.

MANDAN:

Agronomy - The past week continued dry, and temperatures dropped to the lowest for the season. Potatoes in the rotations were dug early in the week. The average yield was about 130 bushels per acre.

Rainfall for September was 0.22 inch, which was over an inch below normal. The total precipitation for the year to date is 16.46 inches, compared with the 60-year average of 14.54 inches.

Maximum temperature, 80°; minimum, 18°; precipitation, None.

Cooperative Grazing Experiment - The cattle appear to be doing well on the pastures, but the cool weather will likely cause them to shrink in weight.

Horticulture - Horticultural trees and plants are entering the winter in a very dry condition. More killing from drought injury may be expected, especially if next spring should be dry.

Raspberries, blackberries, dewberries, and grapes were covered with soil for winter protection. Budded stock in the nursery was also protected in this way. All small fruits were pruned before being covered. Cuttings of grapes, currants, and gooseberries have been made. Discarded trees in the breeding blocks are being hauled away so that the land may be plowed this fall in preparation for planting next spring.

The season's yield of vegetables from the acre garden project is as follows:

Beans - wax	48	qts.
Beans - shell	29	lbs.
Beets - early bunch	447	"
Beets - winter	137	"
Cabbage	1117	"

Carrots	482 Lbs.
Cauliflower	114 "
Eggplant	20 "
Watermelon	240 "
Muskmelon	108 "
Onions	1133 "
Parsnips	107 "
Peas	260 Qts.
Pepper	55 Lbs.
Pumpkin	174 "
Potatoes	870 "
Squash - summer	225 "
Sweetcorn	1569 ears
Tomatoes	624 lbs

In general the early planted vegetables produced best yields, as the season was quite favorable then. Late planted varieties, or those that make their maximum growth late in the season, suffered from lack of moisture. Salad crops including lettuce, radishes, spinach, and celery grown in the coulee garden all yielded very well, as did the other vegetables under different classes grown in this location.

Insect pests in the garden were few and were mainly confined to larva of a small moth which infected cabbages and rootcrops early in the season. There was an outbreak of anthracnose in the waxbean plots, which was severe enough to practically ruin the entire crop. There was no evidence of this disease on beans planted in other localities at the station.

Arboriculture - The fumigation of nursery tree stock and heeling-in for winter storage has continued during the week. Owing to the low temperatures which have prevailed the latter part of the week, Mr. Munro who has charge of the fumigation, advised heeling-in without fumigation, because of its ineffectiveness during cold weather.

Chinese elm seedlings had considerable mould developed on the roots when removed from the temporary heeling-in beds. It is not known at present whether this is the regular root-rot which infects elm seedlings in storage. All elm seedlings have been heeled-in in pure sand in an effort to determine whether this method is effective in preventing the development of the rot fungus.

Visitors for the week included Dr. Kenneth E. Baker, Forest Pathology, B.P.I., Jerome Dahl, Harry Rigden, Harold E. Engstrom and L.S. Matthew, Federal Shelterbelt project, Louis Schatz, Lake States Forestry Station, Prof. J. A. Munro, N. Dak. State Entomologist.

BELLE FOURCHE: Report for two weeks ending October 26, 1935.

The first half of the period was unusually warm, but cold, raw, windy weather accompanied a light snow on October 21, and the following few days were comparatively cool. Snow fell steadily for nearly a day, but only a small amount of precipitation was recorded. The soil continues too dry for the germination of winter grain, and practically no plant growth has taken place during the fall. Even Russian thistles have failed to make any appreciable growth.

Maximum temperature, 88°; minimum, 20°; precipitation, 0.17 inch.

BELLE FOURCHE: Report for week ending November 2, 1935.

The fore part of the week was clear and warm, but unusually cold weather prevailed during the last 5 days. The temperature has remained below 19° since October 29, and it fell to -2° on October 31. A light

snow of about an inch in depth on October 30 was followed be heavier storms on November 1 and 2, in which approximately 5 inches snow were received. The total depth of snow on the ground at the close of the week was 6 inches, representing a precipitation of 0.40 inch. This is the largest amount of precipitation to be received during any single week in over 4 months.

The precipitation for October, 0.36 inch, was 0.88 inch below the 27-year average for the month. A total of only 1.91 inches was received from July to October, inclusive, which is 0.85 inch less than the previous lowest on record for the 4 months, and 4.55 inches below the average for the 4 month period.

Maximum temperature, 78°; minimum, -2°; precipitation, 0.40 inch.

ARCHER:

The weather during the week ending November 2 was warm during the fore part, cold October 30 and 31, warm November 1, and cold today. The cold snap brought a light covering of snow. The total precipitation from January 1 to October 31 was 17.02 inches. This is 4.04 inches more than the previous 22-year average, and was brought about by excessive rains during May, the total of which amounted to 7.63 inches. August was very dry, receiving 0.52 inch of precipitation.

Work at the station consisted of finishing the husking of corn on the rotation plots, and the threshing of the increase areas is in progress. This is done by running the corn through the silage cutter and blowing it directly into the thresher.

Director W. L. Quayle visited the station October 29.

Maximum temperature, 66°; minimum, 5°; precipitation, 0.05 inch.

AKRON:

East and southeast winds at the week end brought damp weather which caused heavy morning dew. Bean threshing, which had held attention the fore part of the week, was then stopped and the threshing of the grain sorghums started. Variety bean threshing was completed. Yields range mostly between 3 and 6 bushels per acre, average of five replications.

Early maturing grain sorghums give indication of yields of 20 to 30 bushels per acre. Golden Glow field corn, in close proximity to the grain sorghums, yielded at the rate of 19.5 bushels per acre. The best proso variety, also in this same vicinity, yielded about 13 bushels per acre.

Tree leaves colored up nicely in this section of the Plains this fall. As a general rule the leaves are frozen on the trees before they have cured to any extent.

Dr. Hurley Fellows has been here this week making foot-rot studies on winter wheat.

Maximum temperature, 75°; minimum, 10°; precipitation, None.

COLBY:

This has been a cold, foggy, misty, sleety, and rainy week. No precipitation of consequence has fallen. The temperature has been below freezing five nights out of the last seven. On the 29th a hard wind blew all day, and by night many bare fields were blowing and the air was full of dust, reminding us of last spring. Wheat seems to be holding its own, but making almost no growth.

Maximum temperature, 81°; minimum, 12°; precipitation, 0.03 inch.

Precipitation for October, 0.11 inch. Precipitation, January - October 1, 10.18 inches, 6.32 inches below the average.

HAYS:

The weather during the past week has been generally cool, cloudy, damp, and disagreeable; but it has been good for the wheat. Since the first killing frost October 23 the foliage has turned brown and many trees are shedding rapidly.

The work during the week has consisted largely of late fall tillage and odd jobs during the disagreeable weather. The Station threshed a small amount of Atlas sorgo from one of the commercial fields during the week.

Maximum temperature, 78°; minimum, 21°; precipitation, 0.06 inch.

TUCUMCARI:

The week was marked by moderate temperatures, periods of high wind, and continued drought. A light frost occurred on October 24, and on the 25th nearly all vegetation was killed by a minimum of 30°. Late sorghum harvesting has taken place since those frosts.

During the week corn was husked, late grain sorghum plots headed increase milo headed and ricked, cotton picked, and preparations completed for sorghum threshing. Yields on M.C. corn plots ranged from 6.9 to 31.8 bushels to the acre, B plot the lowest and G. the highest; average of all plots, 20.4 bushels.

Precipitation to date for 1935 totals 11.57 inches compared with a 30-year normal of 15.27 inches for this 10-month period. Total, past 24 months, 18.79 inches.

DALHART:

This past week saw the first complete killing freeze. Harvesting of forage sorghum plots was completed, as was heading of standing grain sorghum plots. The surface soil is still too dry for emergence of winter wheat and rye. Wheat seeding into dry soil is going forward now because of the lateness of the season. Earlier seeded wheat which emerged has suffered severely for lack of moisture.

Maximum temperature, 77°; minimum, 24°; precipitation, Trace.

BIG SPRING:

Harvesting conditions have been rather favorable for the most part during the past week. Warm, sunny weather has caused cotton to open somewhat faster than before. Picking of Station cotton was started this week, which is the latest date for starting the first picking in the history of the Station. Station work has consisted mainly of heading increase milo and harvesting Hegari. Other work consisted of harvesting a few late plots, picking soy bean seed, and picking cotton.

Cattle for this years feeding experiments were received October 29. They will be kept on preliminary feed for 10 days before starting the test.

G. W. Barnes, Beef Cattle Specialist of the Texas Extension Division was a Station visitor October 29.

Maximum temperature, 90°; minimum, 42°; precipitation, 0.02 inch.

LAWTON:

Another week of cloudy, damp, foggy weather with small amounts of precipitation ensued. With the exception of two or three days, there has been no break in this kind of weather for the past two weeks. Weather forecasts of freezing temperatures during the past week did not materialize. Precipitation, recorded on 4 dates, amounted to 0.11 inch. The total precipitation for October, 3.24 inches, was 0.23 inch above the monthly normal. The weekly minimum temperatures ranged from

37° to 67° and the maxima ranged from 47° to 79°.

WOODWARD:

The outstanding feature of the week was a temperature of 28°, which killed sorghum and other crops in the lower places and nipped foliage generally. While it did not kill all sorghums, it definitely ended the season for them, and harvest will be under full swing for the coming two weeks. Rains helpful to sorghums did not come until the first of September, and those headed since that time have not matured. Even many headed before that time have ripened very slowly owing to lack of clear, bright days.

The soil was never in better condition for planting wheat and getting it up, and most of it over the country has been planted during the past ten days. Pasture will come on late, and unless unusually good rains occur, will be light.

The autumn colors of leaves are very bright, indeed - the elm, which is unusual, making the finest display.

Station work for the week consisted principally of drilling wheat and odd jobs. The wheat plot leveled and bordered is wet to a depth of 3½ feet, while plots from which run-off occurred are wet to only 1½ feet.

Maximum temperature, 75°; minimum, 28°; precipitation, 0.03 inch.

PENDLETON: Report for week ending October 26, 1935.

During the past two weeks 0.96 inch of rain has fallen. This should be enough to start weed growth on fallow land. The fall plowing, disking, and harrowing on the rotation and tillage plots was completed October 26. Practically all the land on the station to be fall sown is ready for drilling. There is not enough moisture in the surface soil to insure prompt germination, some of the wheat will not emerge until more rain is received. Farmers in the drier areas are seeding in the dust, but many are holding off for more rain or will wait until spring. On the station the rate and date of seeding winter wheat and the furrow drill trials were sown October 17.

Roderick Sprague, Pathologist, Division of Cereal Crops and Diseases, spent four days here planting his seed treatment trials.

Visitors included Director Wm. A. Schoenfeld, Oregon Experiment Station, Mr. Fred Callister, member Oregon State Board of Higher Education, and E. R. Jackman, Extension Agronomist, Oregon Extension System.

Maximum temperature, 63°; minimum, 24°; precipitation, 0.96 inch.

PENDLETON: Report for week ending November 2, 1935.

The weather the past week has been very unusual over the entire Pacific Northwest, with record low temperatures reported for October from all sections. In the Pendleton area the field work was stopped on the 28th by a heavy shower of rain, which was followed by a dust storm, then snow during the night. The lowest temperature recorded on the station during the week was 2° above zero on the 2nd. The lowest temperature during October was 5° on the 30th.

The cold weather destroyed most of the late apples in the Yakima, Wenatchee, and Milton Freewater sections of Oregon and Washington, the loss being well over a million dollars. In the truck garden sections all the lettuce, spinach, and potatoes were killed. Wheat farmers in some sections are afraid that the early sown wheat may be winterkilled. In this section very little wheat has been sown, and practically none has emerged.

The soil is so dry that the surface is not frozen, and one or two farmers in this county finished their seeding after the cold weather set in. On the station some seeding was done on the cereal project.

The trees, shrubbery, and perennial flowers show the effects of the cold, as they were in full leaf when the cold snap started. Orchardists fear severe winterkilling in the commercial sections, due to the unhardened condition of the trees.

Dr. F. P. McWhorter, U.S.D.A. Pathologist at Corvallis, spent a couple days here this week outlining some experiments with the virus diseases of peas.

Visitors included, Prof. W. S. Brown, Chief of the Division of Horticulture, O.S.C., and R. H. Robinson, Chemist, Oregon Experiment Station, Corvallis, Oregon.

Maximum temperature, 63°; minimum, 2°; precipitation, 0.17 inch.
Wind Velocity m.p.h., 1.5.

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* NOTE *

This is the last weekly issue of the News Letter for the season. During November - March the issue will be monthly. Weekly letters for 1936 will start with one for the period April 1 - 11.

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REPORT FOR THE MONTH OF NOVEMBER, 1935.

HAVRE:

The month of November was below the average in temperature, precipitation, and snowfall. The first few days were unusually cold, with -23° on the 1st. Since that time the minimum has been below zero only once, and the last two weeks have been reasonable mild, with a minimum of 38° on the 29th. The mean monthly temperature was 23.9° a departure of -6.5°. Precipitation for the month amounted to 0.30 inch, which is a departure of -0.32 inch. The accumulated precipitation, January - November is 7.62 inches, the station average for the same period being 11.61 inches . Wind velocity has not been unusually high at any time.

Range conditions the last two weeks have been fairly favorable, but early in the month snow and ice interferred with grazing. Livestock shipments are practically complete. The station cattle have all been returned to the station from the summer range.

JUDITH BASIN:

The weather during the month of November was cold and dry. The mean temperature, 29.5° was almost 4° below the average for that month. Not enough moisture was received to be of any value to the soil. The top 5 or 6 inches of soil was frozen the first part of the month. Very little of the winter wheat has emerged to date. Soil blowing was prevalent, many summer fallow fields suffering considerable loss of soil.

The first seedings on the 160 acres of land leased from the Prudential Life Insurance Company for studies on reseeding abandoned lands were made during the month. This tract has not been farmed since 1928 and has a light cover of Russian thistles, military grass, tumbling mustard, and lambsquarters. This land is typical of several square miles of abandoned farm land in the southern and western parts of the Judith Basin.

Maximum temperature, 55°; minimum, -14°; precipitation, 0.11 inch.

HUNTLEY:

The storm period which began during the last few days in October extended into November and resulted in the greater part of the first half of the month being somewhat wintry. Snow fell on five days during the period, melting was slow, and the ground was kept too wet for field work most of the time. On four days of the first half of the month the minimum temperatures were below zero.

The last half of the month has been decidedly warmer, and as precipitation was light the soil dried out sufficiently to permit work in the fields to proceed. All fall plowed plots were double harrowed in an attempt to reduce the extremely cloddy condition resulting from dry plowing. On most plots the clods had softened up to some extent and were broken up by the tillage into smaller pieces, but the plot surface is still very rough. Miscellaneous patches of land totaling about 12 acres were sown to crested wheatgrass during the month.

Winter wheat and rye on the plots now appears to be fully sprouted, and a few more days of moderate weather should see these crops

fully emerged. Those plants which came up early in the month have made little growth. Farmers report the early, thin stands of wheat to have deteriorated during the month, but expect the newly sprouted seed to more than make up the deficiency.

Maximum temperature, 61°; minimum, -14°; precipitation, 0.80 inch.

SHERIDAN:

The month opened cold, and temperatures generally continued below normal for the first two-thirds of the month. The last 10 days were mild, with temperatures considerably above the average. The average mean temperature for the month was about 5° below the average. Precipitation was slightly more than half the average, the only moisture of any consequence being a light rain on the morning of the 9th, followed by about 3 inches of snow. This snow disappeared quickly when the weather warmed up after the 20th. Wind movement was about average for the station.

Although the surface of the ground was frozen at the beginning of the month, it thawed out before the snow, and where it was covered with snow did not freeze again. Moisture from the melted snow penetrated below the depth of seeding most fall grain. Examination of some seedings on the 30th found nearly all seed that still lay in dry soil on the 1st to be sprouted now, with some grain apparently newly emerged. Range was open throughout the month, with no feeding of livestock necessary where range was available.

A late fall seeding of grasses, which was delayed by stormy weather at the beginning of the month, was made the 30th.

Maximum temperature, 60°; minimum, -8°; precipitation, 0.46 inch.

DICKINSON:

Cold weather the first week in November was followed by moderate temperatures during most of the month then by a mild period near the close. A minimum of -8° was recorded on the 2nd and 5th. Precipitation on 11 days amounted to 0.77 inch. A light covering of snow lasted most of the month, but only occasional drifts were left on December 1. Since only 0.08 inch of precipitation fell in September and October, the snow was of some benefit to vegetation. Winter wheat and rye had not emerged except on fallow. Livestock are in good condition with plenty of feed for winter.

Maximum temperature, 43°; minimum, -8°; precipitation, 0.77 inch.

MANDAN:

Horticulture - Liberal rains in the spring of 1935 saved many fruit trees from dying and brought temporary relief from drought conditions. However, the late summer and fall turned dry, and there was evident suffering from drought before winter came. Neither late spring or early fall frosts caused serious damage to the fruit crop. A few of the latest maturing varieties of plums were frozen. Diseases and insects were not more troublesome than usual. Blight did some damage to apple trees. Plum gaugers and plum borers were the most troublesome insect pests.

Apples and crabs yielded more than in any previous year. Anisette, Yellow Transparent, Minn. 350, and Anoka were the highest yielding apples. Florence, Sweet Russet, Amur, and White Arctic, were the highest yielding crab varieties.

Plums suffered more than apples from the drought, and yields were low as compared to former years. However, most of the trees made

a good growth and should be in condition to do better in 1936. Native varieties were outstanding among the highest yielders, there being 28 native varieties, 12 Japanese hybrids, and no sandcherry hybrids among the 40 highest yielding varieties. Waconia, Sel. 63, Minn. 79, Sel. 48, Sel. 62, Minn. S.D. 27, "Melander" seedling, Wyant, Sel. 27-5, and Mammoth were the 10 highest yielders.

Sandcherries bore heavy crops of good fruit. Selections 24-16, 24-36, and 24-28, were the heaviest yielders. Sel. 25-2 was of superior quality. These selections are superior to Sioux.

Small fruits for the most part, suffered from drought, and did very poorly in 1935. Strawberries were severely winterkilled and bore little or no fruit. Lathan was the highest yielding and best red raspberry, while Cumberland was the best of the blacks. Currant bushes were weakened by last year's drought and bore light crops. Red Dutch, Victoria, London Market, and Red Lake, were the highest yielders. The latter variety appears to be the most prolific of the large fruiting currants. Gooseberries came through in much better condition than currants. Kanega, Kataga, Keza, Kana, Kapoza, Transparent, and Minn. 2 are the highest yielders. Most of the above are new varieties introduced by the South Dakota Agricultural College. Grapes produced light yields. Uncovered vines except wild selections, suffered severe injury or drought injury. Most native fruits passed through the winter in good condition, and bore good crops. Buffaloberries were an exception, as they had no fruit. Chinese cherries suffered severe drought injury.

Yields in the different cultural experiments were low and irregular. Average yields favored the "hedgerow" system in the spacing experiment, moderate or severe pruning as compared to no pruning in the pruning experiment, and clean cultivation in the cultural methods test. Light yields were obtained from the 1919 combined fruit patch, hillside orchard, and east coulee orchard. Small fruits planted on contours on the west coulee produced much more than in the regular variety tests.

Hand crossing work with fruits was continued in the greenhouse and field, several thousand seeds being obtained from such crossing. A number of new apple and crab selections were made in the breeding blocks. Golden currant selections will be dug and planted in a special test next spring.

Cooperative fruit plantings have suffered drought and grasshopper injury. Some have failed. Others will need many trees for replacements. Fair to good stands were obtained from trees sent out in the spring of 1935.

BELLE FOURCHE:

The weather during November was comparatively cold, unsettled, and windy. The mean temperature for the month was 30°, which is 3° below normal. A number of light flurries of snow occurred, but the 5-inch fall of snow on November 1 and 2 was the only measurable amount of precipitation received. The snow was of very little benefit to crops, as most of it was blown off the fields by a strong wind on November 4. The precipitation was 0.15 inch less than the average for November, making the sixth consecutive month in which the precipitation has been below normal. A total of only 2.26 inches precipitation has been received during the past 5 months.

The soil continues too dry for fall grain to germinate, and conditions are favorable for soil blowing, but no soil movement took place on the several days when high winds prevailed. Some of the roadways on the dry-land project were listed; and uncropped, cultivated plots

and roads were duckfooted as precautionary measures against soil blowing. Most of the corn stubble land and roadways were too dry and hard to permit the duckfoot shovels or lister to penetrate deeper than the shallow layer of loose, dry surface soil.

Husking of corn and hauling of corn stover was completed. The yields of grain ranged from 0 to approximately 9 bushels per acre and the average for all plots will be about 3 bushels per acre.

Maximum temperature, 61°; minimum, -6°; precipitation, 0.35 inch.

ARCHER:

During November the weather was marked by recurring snow flurries and cold snaps. The total precipitation was 0.13 inch. The first half of the month was colder than the last half. The lowest temperature, 4°, was recorded the morning of November 11 and the next lowest, 7°, the morning of November 4. In some sections soil blowing occurred during a couple of days.

Winter cereals are in need of moisture. Rabbits have grazed the crop rather closely, especially on fallow. The range is in good condition, and livestock are thrifty.

The work on the dam and the tree planting by WPA workers has progressed satisfactorily.

Maximum temperature, 59°; minimum, 4°; precipitation, 0.13 inch.

NORTH PLATTE:

A mean temperature of 32.5° for the month is 4.1° below the Weather Bureau normal. There were, however, no severe storms or extreme temperatures. High and low records were 69° and 10°. Rains were general over the State on the 25th and 26th. North Platte at that time received 0.53 inch. Total precipitation for the month was 0.78 inch, and the month closes with a fair supply of soil moisture for winter grains.

Corn husking is well advanced. Yields are 50 to 75 percent of normal, and the quality poor on account of late maturity and a high moisture content. Growers who have corn that is sufficiently dry to qualify for government loans are cribbing and sealing for higher prices. Immature corn is plentiful at present, but it is not likely that the supply will keep up with local demand very long after husking is completed.

Potato growers in western Nebraska suffered heavy losses from freezing in the field in late October, and recently prices have been strengthening materially.

COLBY:

November was a chilly, frosty, cloudy, misty, foggy, sleety, rainy month with some snow. The wind movement was low, and there was only one night when the wind blew hard.

The winter wheat did not make much headway during the month, but held its own, except in the northeast corner of this county, where some of it died from a lack of moisture. That which was still alive when the rainy weather set in during the last week will probably be able to hold on the rest of the winter. The rain came down slow and easy, and added to what the snow and misty, rainy weather brought earlier, was very beneficial to the wheat. It was too cool and the soil was too dry most of the month for wheat to grow much.

All the fall plowing, fall listing, and spreading of straw and manure on the project was done during the month. The alleys and the edges of the roadways have been listed to guard against blowing. The

fallow plots which are to be planted to spring crops were ridged with a furrow drill.

Maximum temperature, 68°; minimum, 3°; precipitation, 1.17 inches.

Precipitation, January - November; 11.35 inches; 48-year average, 17.12 inches.

HAYS:

The month of November was generally cloudy, damp, and cool with occasional spells of a few days each of clear, calm, and mild weather. The month was generally calm. There was no heavy wind. November was the seventh wettest November in 68 years. Although chilled by light freezes several nights, the weather was favorable for wheat, sufficiently warm to promote moderate growth. It is now well rooted, and with the November rains added to the moisture already in the soil the wheat should go through the winter in good condition. There was comparatively little early seeding done this fall, and as a result there are very few fields upon which excessive growth exists. The amount of pasture is limited.

On the 26th and 27th 1.70 inches rain was received, most of which went into the soil resulting in muddy fields and roads on the project. Advantage of this opportunity to puddle the roads (on the project) that are subject to blowing, was taken by making one round on each road with a string of five horses hitched side by side. A good job of puddling was done, and from the appearance of the roads at this time there will be no need for worry about cultivating or listing them to prevent blowing during the winter. The writer recommends a trial of this method for any station troubled with soil blowing in the roadways, providing sufficient moisture occurs to soften the roads, so they can be roughened by tramping.

Work on the station during the month consisted of cattle feeding, a small amount of tillage, and construction work including continuation of work on the six new silos, moving the north half of the old elevation to a new location for a cattle shed, and other repair work.

Maximum temperature, 73°; minimum, 7°; precipitation, 2.17 inches including 4 inches snow.

DALHART:

The month was characterized by two climatic factors. On the 18th a southwest to west wind gave the most severe soil blowing on the station and surrounding land since early spring of this year. The rain which totalled 0.87 inch on the 25th and 26th came as gentle showers, and all was retained by the soil.

A rather high percentage of winter wheat had either not been put in or had perished because of the dry surface soil. Farmers now report that wheat drilling is being resumed. Winter wheat and rye on the station is showing good germination and slight emergence since the rain. Immediately following the rains the station was strip cultivated, except where wheat and rye is drilled or a drilled stubble or standing stalks protect the soil. Field work for the fall would have been completed during the month except for the rain which prevented stover weighing and also necessitated tillage work. Yields of all crops of grain sorghums are just better that total failures.

The mean temperature for the month was 41° which is 2° colder than a 28-year mean. The precipitation for the year now totals 13.23 inches or approximately 75 percent of normal.

TUCUMCARI:

November was favorable for completion of fall field work, with the exception of plowing. The soil was so dry that plowing was delayed until the close of the month, after a good rain was received.

Precipitation for the month totalled 1.07 inches, all occurring on the 25th and 27th. This brought the total for 1935 to date to 12.64 inches. Some station wheat plots show good stands, but on others the seed has not sprouted. Most of the wheat growing section of this county shows wheat in fair to good condition.

Ranges are good, with livestock going into the winter in good condition. There will be considerable bundle feed, but rather a scarcity of grain, in this immediate vicinity.

Station yields were surprisingly high, considering that precipitation totalled only 11.57 inches to the close of October, following an annual total of only 6.13 inches during 1934.

The following are approximate yields, subject to correction by cleaning grain and rechecking.

Crop	Station Ave.	High Plot	High Yield	Low Plot	Low Yield
Sumac Sorgo(Grain)	lbs 1174	MCA	1810	MCB	230
(Total)	8686	MCA	10350	MCB	6190
Kafir	bus. 20.4	165C.	29.5	MCE.	10.3
Milo	bus. 27.5	302B	47.6	MCB.	12.2
Corn	bus. 18.4	MCG.	31.8	MCB.	6.9
Cowpeas(cured hay)	lbs. 1565	295A	2150	158A	1250
		301A	2150		

Maximum temperature, 77°; minimum, 18°.

BIG SPRING:

Weather conditions have been very unfavorable for harvesting sorghums and picking cotton during the past month. With the exception of one week, there were two or three days of damp, cloudy, or rainy weather each week which would stop harvesting operations. The first killing frost of the year occurred November 11. Although this freeze was about a week after the normal date, it caught a lot of late feed and cotton. The cotton was exceptionally late this year, and as a result there were lots of half grown bolls that will not open.

Station cotton was picked over for the first time during the month. Results of the first picking indicate that better than normal yields will be obtained from most plots. Other work has consisted of heading milo on the increase fields and picking cowpea and soybean seed.

Forty head of high grade Hereford calves were measured, graded, weighed, and started on test November 19 after a preliminary feeding period of two weeks.

Station visitors during the month included J. M. Jones, J. H. Jones, and G. W. Barnes of the Animal Husbandry Division of the Texas Station.

Maximum temperature, 81°; minimum, 28°; precipitation, 1.48 inches.

LAWTON:

Murky, cloudy, misty, foggy weather with precipitation records on 20 dates, during the 39-day period, October 23 to November 30 provided a distinctive fall period that was conducive to the growth of small grains, but imposed an expensive and injurious handicap to the cotton harvest. Precipitation during this period amounted to 4.09 inches, and practically none of it was lost by run-off. The November precipitation of 2.51 inches was 0.70 inch above the monthly normal. The November

temperatures ranged from a minimum of 27° on the 4th to a maximum of 75° on the 3rd. The first killing frost was recorded on the morning of the 5th when the previous night temperature dropped to 27°. This with a minimum temperature of 30° on the following night stopped growth and development of late planted fields of sorghum and late maturing cotton bolls.

The damp, wet weather of November made it possible to do field work at only short and irregular intervals. Fall plowing of station experimental plots progressed off and on from November 8 to 23, and the job is not yet completed. Picking of the 1935 cotton crop, carried on usually at half day intervals whenever possible, was finally completed November 22. November weather stained and discolored the lint, distinctly lowering the market grade. A very appreciable percentage of the late bolls on June plantings on thin upland fields did not mature. At the present time approximately two thirds of the crop in this vicinity has been picked. Station yields of seed cotton are generally pretty light, varying from 150 to 500 pounds per acre. The crop possesses a good staple and a strong fiber.

Wheat, oats, and barley are in excellent winter condition, better than for several years. Growth of early planted and volunteer crops of oats and barley are quite rank. Considerable grazing from these crops has been available the latter half of the month. In a very few instances, on fertile soils, where grazing could not be practiced for various reasons oats and barley have grown entirely too rank to survive winter weather.

WOODWARD:

The outstanding feature of the month was a drenching rain of 1.87 inches coming November 25-26. It came slowly and there was practically no run-off. At this time of year evaporation is very slow, so this rain will go much farther toward storing moisture than if it had come earlier. It raises the total for the month to 2.28 inches, which is 1.07 inches above the mean.

Much of the winter wheat crop was planted late this year, and due to the cool weather has made but slight growth. If the winter is not unseasonable warm, moisture now in the soil will carry it nicely until spring. Because of the light covering of the ground there is some danger of soil blowing, which should be easily handled by cultivation since moisture is abundant.

The weather of the past two months has been cool, cloudy, and unsettled, with frequent light showers. This has delayed field work of planting and harvesting. Wheat planting, however, is now out of the way, and farmers are devoting themselves to sorghum harvest. There will be sufficient feed for farm stock, since there is much more than last year and there is less stock in this part of the country.

Station field work for the month consisted of harvesting all row crops and saved feed, drilling wheat, picking cotton, taking soil samples, trapping gophers, planting trees, gathering tree and shrub seed, making cuttings, and miscellaneous repairing of machinery.

Maximum temperature, 73°; minimum, 21°; precipitation, 2.28 inches.

NOTE:

In response to recent inquiry by the Bureau, the Solicitor under date of Nov. 11, 1935, after reviewing the law and rulings related thereto, states:

"In such cases the proceeds should be deposited into the Trea-

sury as miscellaneous receipts. I am of the opinion that there is no legal objection to the Department's making small sales of surplus crops to its employees, without first securing competitive bids. The suggestion is made that in so far as practicable such sales should be made at or near the prevailing market price."

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